BK	NBR	ANS	QUESTION	CHOICE A	CHOICE B	CHOICE C	CHOICE D	ILLUSTRATION
11	4212	C	The major difference in the use of a P-type or S-type lavatory drain trap is the _____.	flow rate at which water must be removed	efficiency to seal and prevent sewer gas backflow	bulkhead or deck connection to the grey water drain system	percentage of solids entrained in the water to be drained	
11	4216	C	Which one of the following statements describes the throttling characteristics of a typical globe valve?	The first third of the valve disk travel in the open direction will result in approximately one-third of full flow rate.	The first third of valve disk travel in the open direction will produce a smaller increase in flow rate than the last third of valve disk travel.	The first third of valve disk travel in the open direction will produce a greater increase in flow rate than the last third of valve disk travel.	The first two-thirds of valve disk travel in the open direction will produce approximately the same increase in flow rate as the last third of valve disk travel.	
11	4217	D	When comparing globe valves to gate valves, globe valves:	are less effective at throttling flow.	are less effective as pressure regulating valves	produce a smaller pressure decrease when fully opened.	require less force to open against large differential pressures.	
11	4218	B	When comparing gate valves to globe valves, gate valves:	are more effective at throttling flow.	require more force to open against large differential pressures.	produce a larger pressure decrease when fully open.	are more effective as pressure regulating valves.	
11	4219	C	To "verify" the position of a fully opened manual valve in an operating system, the operator should operate the valve handwheel:	in the open direction until the valve is backseated one-half turn	to fully close the valve, then open the valve to the fully open position.	in the closed direction, then open the valve to its previously open position.	to open the valve until it touches the backseat, then close the valve to the desired position.	
11	4221	B	Assuming oil and water flow rates remain the same, what would be the effect of scale formation occurring on the inside of the cooling water tubes of a lube oil heat exchanger?	Water temperature outlet temperature will decrease and the lube oil temperature will decrease.	Water temperature outlet temperature will decrease and the lube oil temperature will increase.	Water temperature outlet temperature will increase and the lube oil temperature will decrease.	Water temperature outlet temperature will increase and the lube oil temperature will increase.	
11	4222	C	Tube scaling in parallel flow heat exchangers causes the heat transfer rate to decrease because the _____.	surface area of the tube decreases	cooling fluid outlet temperature decreases	thermal conductivity of the scale is very low	flow through the heat exchanger becomes more turbulent	
11	4226	B	Why must an operator pay particular attension to an auto/manual valve controller when it is placed in manual mode?	Manual valve control is not as stable as automatic valve control.	Valve position will no longer change in response to changes in system parameters.	The position of the valve can only be determined locally during manual control.	The valve can only be operated locally during manual control.	

11	4227	B	A stop-check valve is a type of check valve that _____.	cannot be shut remotely	can be used to prevent flow in both directions	can be opened manually to allow flow in both directions	contains both a gate valve disk and a check valve disk	
11	4228	B	Which one of the following is a difference between a typical relief valve and a typical safety valve?	The actuator closing spring on a relief valve is in a compressed state whereas the actuator closing spring on a safety valve acts in tension.	A relief valve gradually opens as pressure increases above setpoint pressure whereas a safety valve fully opens at the setpoint pressure.	Relief valves are capable of being gagged whereas safety valves are not.	The blowdown of a relief valve is greater than the blowdown of a safety valve.	
11	4246	B	The function of the device illustrated is to _____.	assist in sychronizing generators	measure the speed of a rotating shaft	test for condensate conductivity	measure brine density	GS-0117
12	1575	D	As shown in the AC electrical system power triangle, which value represents the power factor for the system?	A divided by B	A divided by C	B divided by A	B divided by C	EL-0105
12	1576	C	What is the significance of having an indicated power factor of 0.8 when describing the output of a generator?	The generator output voltage and current can be described as 20% resistive.	80% of the energy input to the generator produces useful output.	80% of the output will be converted to useful power.	This information characterizes the DC output of the generator.	
12	1578	C	The term "volt" describes:	a rate of electron flow.	the resistance to current flow.	an electrical potential difference.	the transfer of circulating currents.	
12	1579	B	A 4160 Volt AC generator is loaded to 2850 kW with a 0.85 power factor. What is the approximate kVAR load on the generator?	503 kVAR	1766 kVAR	2850 kVAR	3353 kVAR	
12	1580	D	A 120 volt battery is rated at 800 amp-hours for a continuous 50 kW load. Approximately how long will the fully charged battery be able to supply a continuous 50 kW load before the battery rating is exceeded?	60 minutes	75 minutes	90 minutes	115 minutes	
12	1582	A	If the field current of a paralleled AC generator is increased above normal, what will be the net result to the VAR's and power factor?	VAR's will increase and the power factor will be more lagging	VAR's will increase and the power factor will be more leading	VAR's will decrease and the power factor will be more lagging	VAR's will decrease and the power factor will be more leading	
12	1588	B	When two generators are operating in parallel, what will first occur if the engine driving generator #1 suddenly loses power?	Generator #1 circuit breaker will trip on overload.	Generator #1 circuit breaker will trip on reverse power.	Generator #2 will motorize.	Generator #2 engine will automatically shut down.	

12	1590	D	An AC generator operating in parallel loses its excitation without tripping the circuit breaker. This will _____.	not affect the faulty generator due to the compensation of the other generators	cause the slip rings to melt	increase the output amperage between the armature and the bus	cause high currents to be induced in the field windings	
12	1592	A	The recommended method used to resurface an eccentric DC motor commutator is to _____.	turn it down in the ship's lathe	use a hard canvas wipe	use a hand stone	burnish it with commutator stones	
12	1595	B	Which of the following statements is true concerning the following illustration?	The alternator voltage is higher than the line voltage.	The alternator frequency is higher than the line frequency.	The alternator frequency is lower than the line frequency.	The alternator frequency is equal to the line frequency.	EL-0002
12	1596	D	Which of the following statements is true concerning the following illustration?	The line frequency is greater than the alternators frequency.	The line frequency is 1/4 of the alternators frequency.	The line frequency is 2/3 of the alternators frequency.	The line frequency is 3/4 of the alternators frequency.	EL-0002
12	1597	B	Regarding an induction motor, the output power developed is related to the _____.	speed of the rotating field	slip of the rotor	current flow in the interpoles	DC field excitation	
12	1598	B	What common shipboard system does figure "B" represent?	Navigational running lights	Rudder angle indicator	Sound powered telephone	Winch speed control	EL-0092
13	1295	A	Boyle's law can best be defined as _____.	the volume of an enclosed gas varies inversely with the applied pressure, provided the temperature remains constant	if the pressure is constant, the volume of an enclosed gas varies indirectly with absolute temperature	a body at rest tends to remain at rest.	none of the above.	
13	1297	C	The term "divergent" is best described as _____.	approaching nearer together, as the inner walls of a tube that is constricted.	thermal and kinetic energy being converted to mechanical energy	moving away from each other, as the inner walls of a tube that flare outward	maintaining an equal distance between edges	
13	1703	A	Which of the following statements is true regarding lube oil coolers used for main steam propulsion systems?	Regulating the inlet water flow to a lube oil cooler may result in air binding of the water side.	A lube oil cooler is typically constructed as a cross-flow type heat exchanger.	The coolers may be bypassed when operating in warm sea water temperatures.	The lube oil usually flows thru the tubes and the cooling water around the tubes.	
13	1704	D	Coast Guard Regulations (46 CFR) state that main propulsion water-tube boilers are not required to be fitted with a surface blow off valve if the design pressure is _____.	more than 200 psig (1436 kPa)	more than 250 psig (1795 kPa)	more than 300 psig (2169 kPa)	more than 350 psig (2513 kPa)	

13	1710	A	Air accumulated in the intercondenser of the air ejector assembly is discharged directly to the _____.	aftercondenser	high pressure turbine	main condenser	atmosphere	
13	1719	D	According to the data given in illustration SG-0026, which of the following would be the physical state of the fluid at a gage vacuum of 25.03 inches Hg, and 138.79 degrees Fahrenheit.	Subcooled liquid	Saturated liquid	Mixture of saturated liquid and vapor	Superheated vapor	SG-0026
13	1723	A	According to the data given in illustration SG-0026, which of the following would be the physical state of the fluid at a gage vacuum of 25.03 inches Hg, and 126.08 degrees Fahrenheit.	Subcooled liquid	Saturated liquid	Mixture of saturated liquid and vapor	Superheated vapor	SG-0026
13	1730	D	A steam plant is operating at 100% power when the atmospheric drain tank runs dry allowing a large air leakage into the main condenser. Which of the following will occur as a result of this air leakage?	Decreased condensate temperature	Decreased pressure in the main condenser	Decreased suction pressure at the condensate pump	Decreased condenser cooling water outlet temperature	
13	1732	C	Why does air entry into the main condenser reduce the efficiency of the steam cycle?	Steam flow rate through the main turbine increases	Condensate subcooling in the main condenser increases	Low pressure turbine exhaust steam enthalpy value increases	The air mixes with the steam and enters the condensate	
13	1733	A	What affect will the emergency plugging of leaking condenser tubes have on the condenser pressure and hotwell temperature when returning to normal steam plant sea speed operation?	Absolute pressure and hotwell temperature will increase	Absolute pressure will decrease and hotwell temperature will increase	Absolute pressure will increase and hotwell temperature will decrease	Absolute pressure and hotwell temperature will decrease	
13	1734	A	Which of the following statements represents the advantage of using a small diameter boiler tube over a larger diameter tube?	Small diameter tubes result in lower outside tube metal temperatures.	Small diameter tubes reduce the heating surface area.	Small diameter tubes are less affected by the insulating properties of soot.	Small diameter tubes provide for greater heat transfer rates.	
13	1737	D	The net positive suction head of a boiler centrifugal feed pump should be calculated to include the feedwater vapor pressure and the _____.	impeller ratio of the pump	speed of the impeller	pump capacity in gpm	height of the DC heater	
13	1740	C	Modern day boiler automation allows bypassing the "flame safeguard" system to permit a burner to have a "trial for ignition" period during burner light-off. This period may not exceed _____.	5 seconds	10 seconds	15 seconds	30 seconds	
13	1745	B	The minimum design height of the DC heater is determined by the _____.	dew point temperature of the stack gases	minimum net positive suction head required by the main feedpump	maximum condensate pump discharge pressure	desuperheater outlet temperature	

13	1746	C	While underway at sea, the feedwater inlet temperature to a boiler economizer is determined by the _____.	dew point temperature of the stack gases	superheater inlet temperature	temperature of the HP turbine bleed	desuperheater outlet temperature	
13	1755	D	Machinery operating features are designed to help conserve energy. Which of the following will not contribute to a systems thermal efficiency?	Reduction of friction.	Insulation of hot surfaces.	Lubrication of moving parts.	Elevation of heat sink temperatures.	
13	1756	C	Coast Guard Regulations (46 CFR) concerning superheater safety valves require that the valve _____.	be set at a pressure higher than the drum safety valves	can only be operated by a pilot valve	nominal size is not less than 1.5 inches nor more than 4 inches	is not set at a pressure less than the feed pump relief valve	
13	1760	D	In the illustration of a typical ship service turbogenerator control system, the handle labeled "B" is used to ____.	roll over the high speed pinion	pump up the lube oil manifold	bypass the governor control	reset the overspeed trip	SE-0009
13	1763	B	In the illustration of a typical ship service turbogenerator control system, the device that monitors turbine exhaust pressure is labeled _____.	K	J	M	F	SE-0009
13	1764	C	You would not see a flow through the bull's-eye of the lube oil gravity tank overflow line when the _____.	main engines are stationary at a stop bell	main engines are secured and the turning gear is engaged	the lube oil gravity tanks are being drained	main engines are turning at normal sea speed	
14	1878	D	You have just received a call from the watchstander in the engine room reporting that a high temperature alarm for a main engine bearing has just sounded. Your next instruction to the watchstander should be to _____.	immediately notify the bridge	check the status of the lube oil coolers	increase the speed of the lube oil supply pump	bring the main engine speed to "idle"	
14	1885	C	How many separate timing events must be controlled per cylinder on a direct admission air start, direct reversable, four stroke diesel engine?	4	6	8	10	
14	1886	D	Which of the following conditions may cause an engine to overspeed on initial startup?	Faulty injectors	Tubocharger seal ring failure	Airborne hydrocarbons in surrounding area	All of the above	
14	1887	B	What would be the approximate gap clearance value for a flywheel magnetic pickup speed sensor as found on most medium and high speed engines?	.001 " - .003 "	.022 " - .033 "	.222 " - .333 "	.333 " - .666 "	
14	1890	D	In a normally operating diesel engine, the main source of lubricating oil contamination in the crankcase is a result of the _____.	metal particles loosened by wear	trapped air when no air cleaners are used	condensation of fuel oil vapors	combustion byproducts removed from the cylinder walls	
14	1893	C	Turbulence of the compressed air charge in a diesel engine cylinder will increase _____.	ignition lag	piston side thrust	the efficiency of combustion	compression pressure	
14	1897	B	If the coolant temperature is too low as it passes through internally cooled fuel injectors, the injectors can be damaged by _____.	water condensation in the fuel	corrosion of the nozzle tip	low cylinder head temperatures	inadequate lubrication of the needle valve	

14	1907	B	In a naturally aspirated diesel engine, the volume of air intake is directly affected by engine _____.	compression ratio	displacement	fuel pressure	cylinder clearance volume	
14	1908	C	In a naturally aspirated diesel engine, the volume of air intake is directly affected by engine _____.	compression ratio	fuel pressure	speed	cylinder clearance volume	
15	1912	D	As shown in the illustration, the boarding ladder would be item _____.	9	12	20	21	SF-0042
15	2843	B	Both crude oil washing and water washing use direct impingement to remove residue from tanks. Crude oil washing has an additional advantage, in utilizing _____.	a higher pressure jet	the solvent effect of the crude oil	a higher temperature	none of the above.	
15	2860	A	Longitudinal stability indicates the tendency of a ship to resist a _____.	change in trim	change in list	change in mean draft	change in the period of roll	
15	2861	D	What would be the minimum distance from any shoreline that a vessel must be located before it is permitted to perform a complete ballast water exchange to be in compliance with U.S. Federal Ballast Water Management Regulations?	12 nautical miles	50 nautical miles	100 nautical miles	200 nautical miles	
15	2862	B	Ocean vessel Ballast Water Management Regulations can be found in _____.	33 CFR Part 110	33 CFR Part 151	46 CFR Part 35	46 CFR Part 56	
15	2863	C	To be in compliance with U.S. Federal Ballast Water Management regulations, which of the following procedures may be followed by an ocean vessel entering U.S. waters returning from an international voyage?	Prior to discharging ballast water in U.S. waters, the vessel must perform a complete ballast water exchange in an area no less than 100 nautical miles from any shoreline.	Ballast water may only be discharged overboard if the vessel is underway.	Prior to entering U.S. waters, a vessel may use any Coast Guard approved alternative environmentally sound method of BWM.	Ballast water may only be discharged overboard through an approved oily water separator.	
15	2864	D	To be in compliance with U.S. Federal Ballast Water Management regulations, which of the following procedures may be followed by an ocean vessel entering U.S. waters returning from an international voyage?	Prior to discharging ballast water in U.S. waters, the vessel must perform a complete ballast water exchange in an area no less than 200 nautical miles from any shoreline.	Retain ballast water on board the vessel.	Prior to entering U.S. waters, use any Coast Guard approved alternative environmentally sound method of BWM.	All of the above	